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SUBJECT: CAMBODIA WATER AND SANITATION ASSESSMENT

REF: STATE 128229

¶1. Summary: Over the last decade, the Phnom Penh Water Supply Authority (PPWSA) has become a commercially viable public enterprise regarded as a model across Southeast Asia. Unfortunately, access to improved water supply in rural areas is severely limited and, throughout Cambodia, sanitation is a critical problem with a direct impact on environmental quality. Promoting relatively small, decentralized sanitation systems in rural areas; using water revolving funds and "multi-tranche" funding to increase access to investment capital; and strengthening the regulatory and policy framework for rural water supply will all help to encourage the development of improved water and sanitation facilities. End Summary.

¶2. This report, a response to reftel request for a review of Cambodia's water and sanitation needs and opportunities for strengthening U.S. engagement on these issues, is a collaborative effort between the Embassy in Phnom Penh, USAID/Cambodia and USAID/RDMA in Bangkok.

Water and Sanitation Conditions in Cambodia

¶3. Access to improved water supply in Cambodia is among the lowest in the Asia. According to UNICEF, only 34% of Cambodian households have access to improved drinking water and only 6% have household connections. Urban residents have slightly better conditions with approximately 56% having access to improved water supply and 31% with household connections. Only 29% of the rural population has access to improved water with only 1% of rural residents having household connections.

¶4. Improved sanitation coverage is similarly low in Cambodia with only 16% of the population having access. Approximately 53% of urban residents have access to improved sanitation; however, only 8% of rural residents have access.

¶5. Water resources are generally adequate in Cambodia. The Mekong and Tonle Sap Rivers provide substantial surface water resources utilized for fisheries, agriculture, industry and domestic supply. Total freshwater resources are estimated to be more than 35,000 cubic meters per capita (nearly 6 times the regional average). Seasonal flooding is common in Cambodia and can be followed by periods of drought, particularly in southeastern and northwestern regions of the country. Drought impacts are most significant to the agriculture sector which accounts for 94% of freshwater withdrawals; however, seasonal droughts can affect local domestic water supply.

¶6. The Department of Potable Water of the Ministry of Mines, Industry and Energy (MIME) has the primary responsibility for urban water supply in Cambodia's provincial cities. Since the 1991 peace accord, the RGC has experimented with several different service delivery models for urban areas including private concessions. By

far the most successful service model is the Phnom Penh Water Supply Authority (PPWSA), a public enterprise with autonomous management and financial controls. The Ministry of Rural Development (MRD) is responsible for rural water supply.

¶17. The responsibility for sanitation service in urban areas generally falls to the municipal government. However, the Ministry of Public Works and Transportation (MPWT) plays an important and substantial role in the development of wastewater infrastructure, particularly centralized sewerage and wastewater treatment systems. The MPWT was the responsible government counterpart on recent Asian Development Bank (ADB) investments in wastewater infrastructure in Sihanoukville.

Needs Assessment

¶18. With the successful reform of the PPWSA into a commercially viable, utility operation, the RGC has a demonstrated model for successful urban water service delivery. Current government plans call for similar reform initiatives for Siem Reap, where financial autonomy, performance management techniques and operational transparency will be employed to achieve necessary service improvement and expansion. The RGC further plans to enter into performance contracts with other provincial waterworks offering future financial autonomy as incentive for performance improvement. Donors including the World Bank and the Japanese International Cooperation Agency (JICA) are presently implementing capacity building projects to support further provincial waterworks reform. Additional support to these capacity building efforts could be coordinated to assure that both the functional (policy and operational) and personal leadership aspects of the PPWSA success are transferred to provincial counterparts.

¶19. The lack of a formal policy and regulatory environment governing provision of rural water supply has fostered the development of small-scale, private water supply vendors. This market-driven service delivery model has resulted in incremental expansion of service to Cambodia's rural population. Nevertheless, accessible, adequate water supply is still lacking in rural communities. Additional policy and regulatory activities should be undertaken to safeguard the rural public from over-pricing and ensure healthful service delivery standards are met. Incentives for further rural water supply expansion should be considered to promote further private sector investment and the organization of community service providers, joint service councils, or other delivery organizations. Financial incentives to be considered may include the development of revolving funds which mobilize local finance for service delivery expansion. Formal service agreements and concessions with private sector vendors could also be utilized to regulate and provide incentives for rural water service delivery.

¶110. Sanitation conditions in Cambodia must be considered a priority problem. The vast majority of domestic wastewater is discharged to natural waterways and the environment without treatment, directly impacting inland and coastal fisheries important to the national economy. The ADB has made recent investments in a wastewater treatment plant in Sihanoukville. The European Commission has also funded construction of a wastewater treatment system in Battambang. These projects provide much needed treatment capacity, but have thus far addressed only a small percentage of treatment requirements. A sustainable business model for provision of sanitation services has not yet been demonstrated in Cambodia. Additional investments in decentralized treatment systems for priority sanitation issues and progress toward generating adequate revenue for sanitation system operation and maintenance are recommended to have immediate and sustainable impact on sanitation conditions.

¶111. Given the general lack of water and sanitation infrastructure throughout Cambodia, and especially in rural areas, meeting Millennium Development Goal targets will require substantial capital investment to complement sector reform initiatives. Major development banks including the World Bank, ADB and the Japanese Bank for International Cooperation (JBIC) have provided grants and loan packages for water and sanitation in recent years. These investments have targeted large projects in major provincial areas. Additional capital investment for secondary provincial cities and rural areas is required. Different financing tools, including

pooled financing mechanisms and municipal bonding should be considered to mobilize local financial capital for small to medium sized projects not covered by development bank loan packages. Additionally, these mechanisms could provide sustainable sources of capital financing for future service improvements and expansion.

Current Activities

¶12. The RGC has taken important reform initiatives since 1991. With the support of World Bank, the Phnom Penh Water Supply Authority (PPWSA) was established in 1997. The PPWSA has introduced automated systems for accounting management and billing, incorporated a profit-sharing system for employees, increased metering and fines for illegal connections and introduced innovative technology to reduce system leakages. Given full financial autonomy and a reform agenda, the PPWSA has developed into one of the best models for urban water supply in all of Asia. The PPWSA has successfully repaid all of its loans for infrastructure improvement early and currently borrows on the open market without need for sovereign guarantee. The Cambodian government has recently launched an initiative to implement a similar reform agenda with the Siem Reap waterworks. Other provincial waterworks will be encouraged to reform through signature of management contracts with MIME outlining service delivery milestones. Good performance will be rewarded with additional operational autonomy for the waterworks.

¶13. The donor community has played a significant role in achieving incremental improvements in water supply and sanitation coverage in Cambodia. The World Bank has funded two major projects since 1998. From 1998 to 2004 the Cambodia Urban Water Supply Project was supported by a \$31 million loan from the World Bank to improve infrastructure in Phnom Penh and Sihanoukville. In addition to service expansion, the project supported a revolving fund for increasing connections to the poor and supported national policy development for both urban and rural water supply. The Provincial and Peri-Urban Water and Sanitation Project is a follow-on program funded with a \$19.9 million loan from the World Bank primarily to assist Phnom Penh and other provincial centers with extension of their management responsibility to peri-urban areas of the province.

This program is planned to continue through 2008 and utilizes output based aid (OBA) approaches for certain project elements and is intended to support policy reform on tariffs and subsidies and public-private partnerships. The Water Supply and Sanitation Program (WSP) of the World Bank continues to operate in Cambodia supporting rural water supply policy implementation and awareness raising activities related to both water and sanitation.

¶14. The ADB has also supported development of the water and sanitation sector in Cambodia with various loan and grant packages to the RGC. From 1997 to 2003, the Phnom Penh Water Supply and Drainage project was supported by a \$18 million loan from the ADB and focused on master planning and infrastructure development. An additional \$18 million loan was issued to support the Rural Water Supply and Sanitation Project to provide both hardware and software support for improved water and sanitation in three provinces. Most recently, in 2005, the ADB loaned \$18 million for the Tonle Sap Rural Water Supply and Sanitation program to support improved water and sanitation in 5 provinces including Siem Reap.

¶15. JICA has taken a very active role in water sector capacity building. From 2003 through 2006, JICA has implemented a capacity building program to provide operations and maintenance training to PPWSA staff and to establish a training system that can be accessed by provincial waterworks staff. JICA is presently working with MIME to extend capacity building success with Phnom Penh to other provincial cities. Initial focus will be on Siem Reap. In addition, JICA has supported implementation of a water treatment system in Siem Reap and rural water supply infrastructure in Kampong Cham province. JBIC is also presently considering the development of a wastewater master plan for Phnom Penh.

¶16. USAID has recently initiated activities in Cambodia under the Environmental Cooperation - Asia (ECO-Asia) Program. This program provides technical support, small grant assistance and exchange support to water and sanitation service providers. The program focuses assistance in five reform areas: 1) innovative models for expanding access to the poor, 2) increased access to innovative

financing, 3) improved corporate governance and management by service providers, 4) increasing enabling conditions for water and sanitation services and 5) sustainable sanitation solutions. Specific interventions and activities in Cambodia are presently under consideration; however, initial discussions with program counterparts indicate that the ECO-Asia program will focus on sustainable sanitation in Phnom Penh and improved corporate governance in Siem Reap. Additionally, PPWSA will serve as a mentor for the regional service provider twinning program which aims to catalyze service reform through facilitated programs and sustained relationships between Asian utilities or service providers. Finally, the ECO-Asia program will consider support to the development of a Cambodian Waterworks Association which would serve as a national platform for sharing experience and best practices and would feed into the Southeast Asia Water Utilities Network (SEAWUN) or similar regional association.

USG Engagement

¶17. The PPWSA is a recognized model water service provider in Asia. Achievements of the PPWSA can serve as the foundation for urban water service delivery reform across Cambodia. Capacity building programs of the World Bank and JICA will help to replicate successful service delivery in Siem Reap and other provincial cities. In coordination with these programs, additional USG support is recommended to support priority water service delivery issues not yet addressed including sustainable models for servicing the urban poor and extension of service to peri-urban areas. Given adequate resources, USAID's ECO-Asia program is well-positioned to provide technical assistance to service provider reform and to facilitate twinning and mentoring programs between PPWSA and other provincial waterworks. Additional support to the establishment of a Cambodia Waterworks Association is recommended in order to catalyze the water sector reform agenda, create a platform for professional exchange and best practice sharing and support water sector professional development and regional exchange.

¶18. Access to improved water supply in rural areas is very limited in Cambodia. Lack of government regulation and intervention in rural communities has fostered a private sector service model in many areas which can be used as the basis for service expansion. Further USG engagement should focus on supporting a policy and regulatory framework which promotes expansion of service by private sector suppliers while safeguarding residents from overpricing and poor service quality. Development of minimum service standards for service delivery and support to efforts to establish a regulatory body for water service providers is recommended. In addition, development and implementation of financing mechanisms, including water revolving funds, accessible to private water service providers is necessary to support capital investments in service expansions.

¶19. There is widespread need for addressing sanitation conditions in Cambodia. However, sanitation system sustainability must be addressed prior to implementation. Further engagement of the USG should focus on building business models for sanitation service delivery where sustainable revenue streams meet or exceed operational costs. Small to medium-scale decentralized treatment approaches are effective in addressing priority community issues. These systems have the further advantage of being generally more manageable than larger centralized treatment plants in terms of financing and operations. Decentralized systems address the immediate need for treatment capacity in priority areas and help to build local capacity for sustainable operations of sanitation systems. USAID's ECO-Asia program plans one sustainable sanitation pilot activity in Cambodia. Additional USG engagement to extend the capacity and impact of participatory, community-based, decentralized sanitation solutions is recommended.

¶20. The ADB and other development lending agencies have experienced difficulty in providing small borrowers access to financing for small to medium sized investments (less than \$5 million). A notional idea to develop a "multi-tranche" financing mechanism has been raised by the ADB to allow smaller borrowers, meeting certain performance and credit-worthiness criteria to take small loans through a larger line of credit issued to the national government. In the case of Cambodia, the USG could assist the ADB in developing the lending criteria and framework for a multi-tranche financing

mechanism for water and wastewater infrastructure development. Further support through a capacity building program should then be focused on helping Cambodian waterworks to achieve requisite criteria for borrowing via the multi-tranche financing mechanism.

¶21. All water and sanitation development investments by the USG should be performed within an integrated water resources management framework. Economic growth and urbanization in Cambodia are increasing pressures on demand and affecting water quality. Individual activities should be designed and implemented with awareness of the wider impact on water resources management, including upstream and downstream needs and uses. Special attention should be given to water conservation and demand-side management.

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